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25 August 1983

Worldwide Report

NUCLEAR DEVELOPMENT AND PROLIFERATION

No. 200

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CONTENTS

ASIA

AUSTRALIA

Minister Urges Nuclear Protesters To Define New Targets
(THE SYDNEY MORNING HERALD, 4 Jul 83) 1

Government's Uranium Mining Policy Under Attack
(Various sources, various dates) 3

Threat From Democrats, by Brian Hill
Review of Mining Situation, by Don Kirkwood
Demands of ALP Left, by Mike Steketee
ALP Rejection of Ban, by Brian Hill
Report for Cabinet, by Michelle Grattan
Confusion in Japan

French Nuclear Testing in Pacific Continues in Spotlight
(Various sources, various dates) 12

Government Decision on Observer, by Ian Perkin
Conservationists' Campaign

South Australian Site Said To Have $66 Billion in Uranium
(Don Kirkwood; THE AUSTRALIAN, 7 Jul 83) 14

Tasmania Looks to Nuclear Power as Alternative to Dam
(Peter Terry; THE WEEKEND AUSTRALIAN, 9-10 Jul 83) 17

EAST EUROPE

CZECHOSLOVAKIA

Nuclear Construction Problems Evaluated
(RUDE PRAVO, 28 Mar 83) 19

Construction Delays at Dukovany, by Vratislav Coufal, et al.
Nuclear Power Reactor Safety, by Zdenek Votruba

LATIN AMERICA

BRAZIL

CNEN Head Denies Suspension of Angra-II, III Projects
(O ESTADO DE SAO PAULO, 30 Jul 83) 26

NUCLEBRAS To Receive $80 Million Loan From FRG Banks
(Paterson Pereira; FOLHA DE SAO PAULO, 10 Jul 83) 28

COLOMBIA

Possible Purchase, Uses of New Reactor Discussed
(Ernesto Villarreal; EL ESPECTADOR, 11 Jul 83) 29

NEAR EAST/SOUTH ASIA

INDIA

Press Reports Problems Surrounding Tarapur Plant
(Various sources, various dates) 33

Limitations on U.S. Agreement, by G. K. Reddy
Political Correspondent's Report
Arrangements for Spare Parts, by G. K. Reddy
'Unreliability' of Washington, Editorial
Termination of Agreement Recommended, by Inder Malhotra

India's Second Atomic Research Center To Be at Indore
(THE HINDU, 3 Jul 83) 41

SUB-SAHARAN AFRICA

NIGERIA

Country's Nuclear Energy Potential Explored
(BUSINESS TIMES, 25 Jul 83) 42

SOUTH AFRICA

Nuclear Energy Generates Public's Hopes, Fears
(Brian Barrow; THE CAPE TIMES, 19 Jul 83) 44

ZAMBIA

Briefs
Nuclear Policy Urged 46

WEST EUROPE

FINLAND

New Firm Established To Coordinate Plans for Fifth N-Plant
(HELSINGIN SANOMAT, 2 Jul 83) 47

Paper Says Nuclear-Safety Inspection Inadequate
(Editorial; HELSINGIN SANOMAT, 4 Jul 83) 49

SPAIN

Nuclear Emergency Evacuation Exercise Around Asco Plant
(Tomas Carot; AVUI, 19 Jul 83) 51

MINISTER URGES NUCLEAR PROTESTERS TO DEFINE NEW TARGETS

Sydney THE SYDNEY MORNING HERALD in English 4 Jul 83 p 12

[Text] CANBERRA--Australia's growing peace movement should concentrate on the issues of uranium mining and American bases on Australian soil, according to a Federal Government minister.

Mr Tom Uren, the Minister for Territories and Local Government, told a convention in Canberra on the weekend that community awareness of the dangers of the nuclear industry would have to be translated into popular support for action.

Mr Uren's speech is a clear indication that the emergence of a broadly based peace movement in Australia will become an increasingly important factor in determining Labor Party policy on these issues.

Mr Uren said the movement should retain the diversity and breadth of its support, while turning its attention to specific areas of "Australia's involvement in nuclear matters."

These were:

--Uranium mining, where the movement would be 'on its strongest grounds" to affect policy.

--The joint US-Australian facilities (including North-West Cape (a prime nuclear target") Pine Gap and Nurrungar.

--The use of local ports by visiting nuclear-powered and armed ships. Two nuclear-powered US Navy ships are currently the subject of protests in Western Australia.

--Australia's reaction to the growing nuclear presence in the Indian and Pacific Oceans.

"The debate must address the deep-seated and legitimate concern of Australians for national security. It must be promoted in a way which recognises the continuing popular support for the American alliance," he said.

"But it can be begun with the confidence that there is emerging support for a more independent and more self-reliant Australia."

Mr Uren was addressing the National Consultation on Nuclear Disarmament Strategies in Canberra.

"Questions such as the role of North-West Cape and the other facilities have been of interest for many years to the peace movement and to sections of the labour movement.

"But there has not been an informed public debate which deeply penetrates the community and which begins to cut across political allegiances.

CSO: 5100/7541

GOVERNMENT'S URANIUM MINING POLICY UNDER ATTACK

Threat From Democrats

Sydney THE WEEKEND AUSTRALIAN in English 9-10 Jul 83 pp 1, 2

[Article by Brian Hill]

[Text]

THE Australian Democrats are planning a showdown in the Senate over uranium mining in a bid to force the Hawke Government to abide by Labor's official anti-uranium platform.

The Democrats' leader, Senator Chipp, revealed last night his party would either introduce a private members bill based on the official uranium policy laid down by Labor's national conference, or move a parliamentary debate which would force Labor senators to take a public stand on the issue.

Either course would re-open the deep divisions in the ALP on the mining and export of uranium oxide, and prompt the Left to renew its efforts to revoke negotiating licences granted to Australia's two uranium producers, Queensland Mines and Energy Resources of Australia.

Senator Chipp told *The Australian* he was angry that people who had supported the ALP at the last election because of its strict anti-uranium policy had been "treacherously betrayed" by the Labor Government's failure to adhere to the party platform.

"Uranium will be a major issue when Parliament resumes in August," he said.

"The Democrats will be using every device to expose the mind-bending hypocrisy of the Prime Minister, Mr Hawke, and the Foreign Minister, Mr Hayden, who are talking about a nuclear-free South Pacific zone while continuing to permit producers to negotiate for uranium contracts overseas."

The uranium question provoked a long and bitter debate at last year's ALP national conference, which eventually decided that Labor in government would be bound to:

DECLARE a moratorium on uranium mining and treatment in Australia.

REPUDIATE any commitment of a non-Labor government to the mining, processing or export of uranium.

NOT permit the mining, processing or export of uranium pursuant to agreements entered into contrary to ALP policy.

Last month, however, left-wing MPs narrowly failed to push through a motion at a Caucus industry committee meeting that the Government withdraw all uranium negotiating licences.

The party's right-wing succeeded in temporarily defusing the uranium issue with an alternative resolution that there should be no approval for new export contracts until a Cabinet review had been completed.

An interim report to the Parliamentary Labor Party is expected shortly.

The question of uranium exports was highlighted again this week with the announce-

ment by Western Mining Corporation Holdings Ltd that reserves of uranium at the huge Olympic Dam prospect in South Australia now represent one million tonnes, making it the biggest uranium resource in the Western world and worth $66,000 million at current world contract prices.

Senator Chipp, whose party is even more implacably opposed to uranium mining than the ALP, immediately called on the Government to stop uranium mining at the site, Roxby Downs — but to no avail.

He was horrified at the announcement by Western Mining that their estimate of the uranium deposits at Roxby Downs had doubled since last year, "making the reserves so great that they could supply the entire Western world with uranium oxide for 40 years at the present rate of consumption."

Senator Chipp said: "The announcement by Western Mining has made it quite clear that the Government can no longer get away with the excuse that the mining of uranium at Roxby Downs is purely incidental to the mining of copper there.

"The time has come for the Government to stop dilly-dallying over its uranium policy and to make it clear that Australia is no longer prepared to traffic this potentially lethal mineral.

"In view of the oversupply of uranium oxide in the world, development of the Roxby Downs deposit at this stage could not be justified in economic terms."

Last night Senator Chipp was particularly scathing about what he described as the "hypocrisy and mealy-mouthed attitude" of Mr Hawke and Mr Hayden.

"To allow such a contract to proceed while still talking about a nuclear-free zone in the South Pacific is breathtaking ... absolutely farcical," he said.

Mr Hayden said during his recent visit to South-East Asia that continued French testing in the Pacific justified the Hawke Government's call for a nuclear-free zone in the region.

Australian uranium exports to France have been suspended until at least October next year, the date Queensland Mines must make their next shipment under existing contracts.

Last night the Minister for Trade, Mr Bowen, could not be reached for comment.

He authorised the licences for Queensland Mines and Energy Resources of Australia — the companies which operate the Narbalek and Ranger uranium mines in the Northern Territory.

Decision

The Government, however, has justified the decision to issue negotiating licences to the two uranium producers as a desire to allow the companies to resume negotiations with electricity companies in the US and thereby enable them to maintain a presence in the market.

Separate government approval would be required before the two companies could sign any export contracts.

Review of Mining Situation

Sydney THE AUSTRALIAN in English 11 Jul 83 p 10

[Article by Don Kirkwood]

[Text] LAST WEEK'S revelation of the immense potential of uranium reserves at Olympic Dam in northern South Australia may foreshadow a fundamental change in the nature of the world uranium industry.

It is not just the prospect that Olympic Dam could contain one million tonnes of uranium oxide, nor that reasonably assured reserves in other parts of the country could amount to 550,000 tonnes, compared with a Bureau of Mineral Resources estimate of 315,000 tonnes last December.

The change that is occurring is that uranium, having been thought of as an extremely scarce resource, is not all that rare at all.

A possible reserve of 1.55 million tonnes in Australia would be enough to supply the Western world for decades, at known andprojected rates of consumption.

And the resource consists of uranium oxide economically producible at present world prices.

Since uranium occurs in a host of environments there are no doubt great quantities that could be mined at higher prices.

But the immense reserves now coming to light in Australia, assuming they are mined, will make these other resources an uneconomic proposition for the foreseeable future.

It is a common belief in the industry that exploration for uranium in Australia has so far only scratched the surface; that much remains to be found, even close to existing mines and deposits discovered to date.

There is, of course, no point in locating any more uranium in Australia as matters stand.

The Federal Government is bound by Australian Labor Party policy not to allow any further contracts to be entered into, and not to allow the development of new mines.

The ALP appears to be divided on this policy, but for as long as its attitudes remain in doubt, or the ban sticks, there will be no further exploration.

Ranger and Nabarlek, both in the Northern Territory, are our only present producers, with an annual output of approximatley 4000 tonnes of uranium oxide a year.

Efficiency

That they are very profitable mines in a relatively depressed world market--but one that is reviving--is a tribute to the efficiency of the miners and the richness of the deposits.

Nabarlek's resource is finite, and it will have fulfilled its contracts and closed down operations by 1990.

Ranger is a vast resource. Its reserves have not been fully delineated because there is no need to do so, but its capacity could be doubled to 6000 tonnes a year and operations could still be going at that rate in 30 years time.

Waiting in the wings are Jabiluka, Yeelirrie, Kongarra, Ben Lomond, Honeymoon, Beverley and, of course, Olympic Dam.

Ranger, Jabiluka, Olympic Dam and Yeelirrie have the potential to be the largest uranium mines on earth.

The Key Lake mine in Canada, which is coming on stream in the next two years, will produce about 4500 tonnes of uranium oxide in a year, which will make it the world's largest producer.

The Rossing Mine in South West Africa produces at about the same rate and appears to have substantial reserves, but Rossing's future is clouded by political uncertainites.

In terms of reserves, Australia looks like the lucky country but there is no guarantee that vast ore-bodies will not be discovered in the rest of the world.

And so, if Australia is to have a uranium industry of the scale it could support, the rules will have to be defined pretty quickly, before the opportunity is lost.

There has been controversy as to whether a market does or does not exist, and that has been used by the Federal Government as an excuse for sitting on its hands.

The obvious response to such a ridiculous non-policy is to let the potential and current producers discover if there is a market.

And they do not share Canberra's pessimism.

One reason is the sharp increase in the size of world reserves, which at first appears a paradox.

But the point is that the advent of fast breeder reactors, which would use much less fuel, looks like being put off.

If fuel is easily available, most utilities would prefer to use a known and safe technology in theirpower stations, especially since the cost of fuel is a very small component in the cost of producing electricity from nuclear energy.

Throughout the world, including the Eastern bloc, there are 294 nuclear power stations in operation.

They are located in 25 countries ranging from Finland to Brazil.

A further 215 are under construction and will come on stream over the next 10 years.

In addition, 21 of the nations that already have nuclear power stations are building more and power stations are being built in six nations that do not have any at present.

Significant

The scale of the plants being built is significantly greater than those already operating.

According to Western Mining Corporation Holdings Ltd, the consumption of uranium for electricity production throughout the world is continuing to grow.

"During 1982, production of nuclear electricity increased by almost 10 per cent making nuclear by far the fastest growing energy sector, supplying approximately 10 per cent of world electricity.

"This share will reach 17 per cent in 1985 and 23 per cent or more by the year 2000."

WMC says that the new units under construction will more than double world uranium demand over the next 10 years.

"Commitments to new reactors will add to demand into the 1990s," WMC says.

"Six new reactors were ordered during 1982, a year of deep economic recession."

Nuclear power utilities have to secure their fuel supplies up to five years before the plant comes on stream.

Supply is critical and, of course, the utilities seek long-term contracts, up to 20 years.

"These contracts must also be co-ordinated with the necessary conversion, enrichment and fuel fabrication contracts," WMC said.

"The first physical deliveries of yellowcake are usually required to commence two years before reaction commissioning."

Within the next two years it is expected that the market will move decisively in favor of producers.

It is therefore urgent that Australia decides its attitude quickly, for the marketing opportunities are here and now.

Ironically, if Australia should decide not to go ahead, one of the chief beneficiaries will be South Africa and a number of other African states that impose no safeguards or special conditions whatsoever on their exports of nuclear fuel.

As WMC points out, the Australian industry is receiving enquiries about the possibilities of long-term supply from around the world.

There is no doubt in the industry that satisfactory contracts that meet Federal Government price guideines and safeguards can be written right now.

It is up to Canberra to make up its mind.

Demands of ALP Left

Sydney THE SYDNEY MORNING HERALD in English 11 Jul 83 p 3

[Article by Mike Steketee]

[Text] Left-wing Labor MPs intend moving at tomorrow's Federal Caucus meeting for a strong reaffirmation of ALP policy, including a demand for the withdrawal of negotiating licences issued to two companies

They will pursue the issue despite efforts by the Deputy Prime Minister and Minister for Trade, Mr Bowen, to dissuade them in the interests of Government unity.

A motion which Mr Gerry Hand and Mr Peter Milton, from Victoria, and Mr John Scott, from South Australia, want to put at the meeting says it is vital for the Government to stand by the major commitments in the party's uranium policy.

It lists these as the phasing out of uranium mines, putting a ban on the development of new mines — with the exception of those where uranium is mined together with other minerals, such as Roxby Downs in South Australia — and cancelling existing export licences to mining companies selling Australian uranium to countries, such as France, engaged in nuclear weapons testing.

"Accordingly, we call on the Federal Government to withdraw these special licences granted to Energy Resources of Australia and Queensland Mines to negotiate new uranium contracts," the motion says.

"Further, we resolve that Queensland Mines should not be permitted to proceed with shipments of uranium to France until the French Government ceases all nuclear testing programs in the Pacific region."

The motion is the same as that proposed by Mr Lewis Kent (Victoria) and modified by Mr Barry Cunningham (Victoria) two weeks ago in the Caucus Industry Committee.

It was carried 14-8 but rescinded after a rearguard effort by supporters of the Prime Minister, Mr Hawke, who successfully substituted a softer motion.

Moved by Senator Graham Richardson (NSW) and amended by Mrs Ros Kelly (ACT), the second motion called on Cabinet to review the right of Queensland Mines and ERA to negotiate for contracts.

It said Cabinet should report back to tomorrow's meeting of Caucus.

After the meeting, Mr Hand, Mr Milton and Mr Scott wrote to Mr Bowen protesting over the "tactics employed by some members of the committee to frustrate a decision made by a clear majority of committee members."

They said the procedure adopted at the meeting by the chairman, Dr Andrew Theophanous, was wrong. Therefore they intended to put the Kent-Cunningham motion to the next Caucus meeting.

Mr Bowen wrote back suggesting there was no need for the motion to proceed in view of the decisions of the National Executive and the review by Cabinet.

However, Caucus members had been given no indication by yesterday that Cabinet intended withdrawing the licences.

The National Executive of the ALP on June 29 passed a resolution acknowledging its right to interpret party policy and calling for greater consultation between all sections of the party.

At that meeting, Mr Hawke gave a commitment that there would be no new uranium mines, except Roxby Downs, under his Government and said he would implement party policy to phase out uranium mining.

Mr Hawke's supporters said yesterday they regarded the uranium debate tomorrow as "a bit of a hurdle" for Mr Hawke.

Efforts are being made to solidify support behind the Richardson-Kelly motion finally adopted by the industry committee.

Economic policy is also expected to be debated at tomorrow's meeting, with the Left preparing a motion arguing that the Government should take a more expansionary line.

However, considerable support has swung behind Mr Hawke and the Treasurer, Mr Keating, in recent weeks, for their argument that the $8.5 billion deficit target is the maximum consistent with a responsible long-term economic policy.

ALP Rejection of Ban

Sydney THE AUSTRALIAN in English 13 Jul 83 pp 1, 2

[Article by Brian Hill]

[Text] THE Federal ALP yesterday overwhelmingly rejected a new move by the Left to ban uranium mining and cancel uranium export licences to countries engaged in nuclear testing.

In voting 54-29 against a motion by two Victorian left-wingers, Mr Gerry Hand and Mr Peter Milton, the Labor Caucus gave the Prime Minister, Mr Hawke, a two-month breathing space on the uranium issue until Federal Cabinet completes an extensive review on the party's existing uranium policy.

Mr Hawke told Labor MPs he expected the review to be completed by September, and promised it would then be submitted to the full Caucus for debate.

Last night several left-wing MPs who had supported moves to steer the parliamentary party back to the hard-line anti-uranium position laid down in the official ALP platform said they were disappointed but not discouraged.

Yesterday's debate lasted about 90 minutes and climaxed several weeks of arguing over licences granted by the Federal Government to the country's two uranium producers, Energy Resources of Australia and Queensland Mines, which allow them to negotiate for uranium contracts overseas.

The Deputy Prime Minister, Mr Bowen--who issued the licences without first referring to Cabinet--was one of about a dozen speakers.

He told Caucus the Government had inherited a confused uranium policy after the election, and that the licences only permitted the companies concerned to remain in the market place for the time being, and not to actually sign export contracts.

Mr Hawke, who did not speak during the debate, earlier reported to Caucus there were "a number of reviews of certain aspects of this policy being undertaken by Senator Walsh (Minister for Resources and Energy)".

He said these aspects included the question of nuclear safeguards associated with the export of uranium and suggested that a debate on the matter be held over until all inquiries were concluded "some time in September".

Caucus subsequently launched into formal debate of a motion agreed to a fortnight ago by the party's industry committee.

It read: "This committee calls upon the Government to approve no new contracts for the sale of uranium from mines owned by ERA and Queensland Mines and calls on the Cabinet to review the rights of ERA and Queensland mines to negotiate contracts in the light of ALP policy and to report to the industry committee."

Amendment

The motion, moved on behalf of the industry committee by Senator Graham Richardson (NSW) and Mrs Ros Kelly (ACT), represented the outcome of considerable debate by the industry committee two weeks ago when a much harder anti-uranium motion proposed by the Left was softened into the wording put to the full Caucus meeting.

But following late-night meetings of left-wing MPs on Monday, Mr Hand and Mr Milton attempted at yesterday's meeting to amend this motion back to the hard-line stance the Left was proposing at the industry committee meeting.

Yesterday's amendment read: "It is vital that the Federal Government should stand by the major commitments contained in our national uranium policy. These are to phase out uranium mines, impose a ban on the development of any new mines subject to clause 64c and cancel existing export licences for mining companies which sell our uranium to countries such as France engaged in nuclear weapons testing.

"Accordingly, we call on the Federal Government to withdraw the special licences granted to Energy Resources of Australia and Queensland Mines to negotiate new uranium contracts."

The Hand-Milton amendment was eventually defeated almost two to one--54-29.

Caucus then adopted overwhelmingly on the voices the motion which has given Mr Hawke his breathing space.

The motion, moved by one of the Prime Minister's closest supporters, the Minister for Aboriginal Affairs, Mr Holding, read: "That the report of the industry committee be noted and referred to Cabinet for consideration with all other reports. That Cabinet report back to Caucus its recommendations for adoption before any such Cabinet recommendation is made final."

The Leader of the Opposition, Mr Peacock, said afterwards: "The Labor Cabinet must reject the recommendations of the industry committee if Australia is to maintain its reputation as a reliable trading partner and a responsible nation prepared to contribute to the non-proliferation of nuclear weapons."

Report for Cabinet

Melbourne THE AGE in English 13 Jul 83 p 4

[Article by Michelle Grattan]

[Text] **CANBERRA. — Federal Ministers have received the main report by Government officials on the review of uranium policy.**

The report outlines the effect on employment, investment, export income and taxation of adopting various tough or soft policies on uranium mining and export. It has been prepared by officials of 10 departments, headed by the Department of Resources and Energy.

The Prime Minister, Mr Hawke, said yesterday the Government's uranium policy review would be completed by September.

Another paper is being prepared on safeguards policy — what has been done in the past and what might be the appropriate future policy.

The finished report, which contains about 150 pages, does not try to interpret Labor policy on uranium mining and export.

It attempts to quantify the effects on tax, jobs, exports and investment in all situations from a quick close down of the industry to an open slather approach of allowing both new and existing mines to proceed.

Present Labor policy is for existing mines to go ahead but for no new mines to be allowed except South Australia's Roxby Downs. The policy provides for the uranium industry to be phased out.

However there appears to be a considerable shift of opinion taking place within the party. A growing number of members believe the present policy is unrealistic.

Some Labor sources predict that the ACTU could soften its anti-uranium policy soon and that the ALP would then be ready to modify its policy.

Government sources said the estimates given in the report were heavily qualified.

The report gives various options on the future market for uranium which many observers predict will be very depressed because several countries that were moving towards reliance on nuclear power have cut back their programs.

The report also looks at Aboriginal royalties and possible compensation if mines did not go ahead — although it only touches on compensation.

Confusion in Japan

Perth THE WEST AUSTRALIAN in English 11 Jul 83 p 30

[Text]

ADELAIDE: There was significant confusion in Japan over the Federal Government's uranium policy, the South Australian Opposition Leader, Mr Olsen, said yesterday.

Speaking on his return from a nine-day, privately funded Asian visit, he said that Australia could lose Japan as a long-term market for uranium.

The Japanese Government and business circles were confused because there was not a clearly defined policy on uranium exports and enrichment.

"There is no doubt that Japan regards Australia as a preferred customer for long-term supplies of uranium," Mr Olsen said.

"However, we could lose this valuable market if the Federal and State Labor governments do not define a clear policy on uranium exports and uranium enrichment."

He said that the South Australian Government must change its policy to ensure the future of uranium exports from the Roxby Downs mine.

A Japanese feasibility study has shown that there was a real possibility of alleviating South Australia's gas-supply problem, he said.

CSO: 5100/7540

FRENCH NUCLEAR TESTING IN PACIFIC CONTINUES IN SPOTLIGHT

Government Decision on Observer

Sydney THE AUSTRALIAN in English 14 Jul 83 p 2

[Article by Ian Perkin]

[Excerpts] AUSTRALIA will send a scientific observer to the French nuclear test site on Mururoa Atoll in the central Pacific, provided the Pacific Forum nations agree to the proposal.

The Minister for Foreign Affairs, Mr Hayden, announced the Government's response to the French Government's invitation to send a scientific mission at a press conference yesterday.

Commenting on the French nuclear testing issue, Mr Hayden said France had approached Australia and other nations in the Pacific to send a mission of scientists to Mururoa.

Doubts

The New Zealand Government has already accepted the French offer, but the Australian Government initially had some doubts, considering it might represent de facto recognition of the French right to test in the Pacific.

However, Mr Hayden indicated yesterday it might be better to be an insider observing the tests rather than an outsider looking in.

He said Australia would be prepared to take part in the proposed inspection of Mururoa Atoll provided the mission was endorsed by the South Pacific Forum, which is to meet in Canberra in late August.

Conservationists' Campaign

Perth THE WEST AUSTRALIAN in English 12 Jul 83 p 19

[Text] MELBOURNE: The Australian Conservation Foundation yesterday began a "fallout" campaign to divert tourists from French islands in the South Pacific.

The move results from a decision in the

weekend by the national council of the ACF to protest against French nuclear testing at Mururoa Atoll.

The acting ACF director, Mr Doug Hill, said that conservationis s would try to persuade Australian tourists to ignore French resorts such as New Caledonia and help other Pacific islands such as Fiji in their tourist promotions.

The ACF council, meeting in Melbourne, said that news of the campaign would be personally relayed to Tahiti by ACF councillor Bill Sokolich.

Tests

Mr Hill said: "The French have certainly indicated that they intend continuing with tests in the area."

An ACF bulletin issued after the meeting called on all Australian tourists to the South Pacific to visit areas other than French Polynesia as a protest gesture.

It called on the Federal Government to take stronger action to end French nuclear testing in the South Pacific and asked for a complete ban on uranium shipments to France.

Mr Hill said that the council had also considered a ban on French goods.

"But that might have caused Common Market problems so we decided to attack their tourist trade," he said.

Mr Sokolich said: "France could suffer a big tourist fall off in the South Pacific over the nuclear tests.

"Australians are very angry. They're bitter about the way France is using the South Pacific as a nuclear garbage bin.

"It is totally unacceptable to allow nuclear testing to continue. It's the greatest paradox to have nuclear explosions in an area which is considered to be an ideal area of living.

CSO: 5100/7541

SOUTH AUSTRALIAN SITE SAID TO HAVE $66 BILLION IN URANIUM

Sydney THE AUSTRALIAN in English 7 Jul 83 p 1

[Article by Don Kirkwood]

[Text] WESTERN Mining Corporation Holdings Ltd has lifted indicated reserves of uranium at the huge Olympic Dam prospect in South Australia to one million tonnes, making it by far the largest uranium resource in the Western world.

At current world contract prices, the uranium is worth $66,000 million.

Last year, Western Mining gave indicated reserve figures for Olympic Dam (which is part of the huge Roxby Downs uranium-copper deposits) of about 550,000 tonnes of uranium oxide, which was by far the largest deposit known in Australia.

That figure has now been almost doubled.

The reserves are so great they could supply the entire Western world with uranium oxide for 40 years at the present rate of consumption.

The problem, of course, is the clouded attitude of the Australian Government towards uranium mining, although it appears that a loophole will allow Olympic Dam to go ahead.

By-product

That is because the projected output of 3000 tonnes of uranium oxide a year will be regarded as a by-product of the 150,000 tonnes of copper that will eventually also be produced.

In a recent paper, Wester Mining said Australia's assured and probable resources amounted to about 550,000 tonnes of uranium oxide.

"Indicated resources at Olympic Dam may increase this by one million tonnes," Western Mining said.

This is a far higher figure than the Bureau of Mineral Resources' estimate of 314,000 tonnes of oxide recoverable at less than $US80 a half kilogram at December 31.

Uranium at Olympic Dam will be mined at less than $US80 a half kilogram, as will the other 550,000 tonnes Western Mining regards as assured or probable. The effect is to double the Western world's economically recoverable reserves, of which half are in Australia and one-third in one deposit, Olympic Dam.

Australia's potential is recognised internationally, with the chairman of Nuexco, the leading American uranium brokerage house, noting the size of our reserves but also pointing to the difficulties.

Mr J.R. Wolcott said recently that Australia was having difficulty in becoming a factor in the world market consistent with its potential.

"In fact, Australia seems determined to 'shoot herself in the foot' at every step," Mr Wolcott said.

"Neither developed resources nor a reliable supplier image have fully materialised."

Mr Wolcott said vacillations by Australian governments had placed the country in a position where some potential customers regarded it as a supplier of last resort.

The development of Australia's uranium reserves is a contentious issue, but it is clear that in simple economic terms markets can be developed.

"The companies involved in the discovery, evaluation and development of these projects have of necessity made a very close study of the world uranium market over more than 10 years," Western Mining said of the local industry.

"That all of them wish to proceed with development is a consequence of their judgment that the large investments required to develop these projects are worthwhile.

"These are the people of commercial judgment who are close to, and understand, the market in detail."

Western Mining may have been thinking of remarks by the Minister for Minerals and Energy, Senator Walsh, who claimed in March that uranium mining was not an issue since there were no markets.

By the time Australia's major undeveloped deposits were in fully production--by about 1990--the market is expected to have swung decisively in favor of producers.

Western Mining said that at January, 1983, there were 295 nuclear power reactor units in service in 22 countries.

In addition, there are 243 reactors under construction throughout the world which will be commissioned over the next 10 years.

As a result, world consumption of uranium oxide will double from 25,000 tonnes a year at present to more than 50,000 tonnes.

At the same time, US production is falling away sharply and it is expected that by 1990 the United States will have to import the bulk of its requirements of about one-third of the Western world's total.

CSO: 5100/7541

TASMANIA LOOKS TO NUCLEAR POWER AS ALTERNATIVE TO DAM

Sydney THE WEEKEND AUSTRALIAN in English 9-10 Jul 83 p 3

[Article by Peter Terry]

[Text]

THE High Court decision to outlaw the Franklin Dam project has brought Tasmania 20 years closer to the introduction of nuclear power, the State's Premier, Mr Gray, said yesterday.

He said Tasmania was now faced with the prospect of selecting alternatives to the dam, and the options – including nuclear power – were certain to cause just as much uproar among conservationists as did the dam proposal itself

Mr Gray said although nuclear power was unlikely to be selected this time, it probably would be used by the year 2000.

"The loss of the Franklin dam has meant we have forgone 20 years of potential electricity development, and that has brought us that much closer to the day when we will need nuclear power," he said.

Mr Gray made his comments during a wide-ranging press conference in Perth.

During the conference he:

DEMANDED a national referendum to determine whether Australians really wanted the constitutional changes brought about by the High Court's decision on the dam.

SUPPORTED moves for a meeting of Liberal Party leaders to discuss the issue.

REJECTED attempts by some elements of the Liberal Party to make the future construction of the Franklin dam party policy.

SAID he was "aghast" at the pollution potential of the schemes that would need to be built to replace the Franklin dam.

He said the High Court decision as it affected the Constitution was of far greater importance than the fact it had stopped the dam project.

It had brought about a fundamental change in the balance of power between the Federal and State governments.

The Commonwealth was a signatory to 1500 or more international treaties and each could now be invoked by Canberra to control the States.

Mr Gray said he agreed to an initiative by the West Australian Liberal Party Leader, Mr O'Connor, that all Liberal leaders should meet to plan a course of action that would return Australia's Constitution to what it was before the High Court decision.

He said it was vital that a referendum be held on the constitutional changes. If they were allowed to remain as they were, they would present a serious threat to the freedom of the States to develop resources, and determine their own systems of health and education.

Mr Gray said he could not yet suggest how a suitable question could be framed to put the issue to the people in a referendum.

He believed one solution might be to state as clearly as possible what were the powers of the States and Federal Government before the High

Court decision, and ask the people if they agreed to the present change.

Mr Gray said he agreed that opponents of the High Court decision could easily lose the referendum.

"But we cannot be worse off than we are at the present time. Mr Hawke just wants to abolish the States," he said.

Alternatives

The Premier said he had no wish to back the suggestion made by some members of the Liberal Party that building the Franklin dam should be made party policy.

"We have accepted the decision of the High Court on that matter, and it does not help us to make those sorts of speculations about the future," he said.

"I think we should now put the Franklin dam behind us."

Mr Gray warned that the alternative sources of electricity-generating power that Tasmania would now be forced to seek were likely to cause just as big an outcry from the conservationist lobby as the Franklin project.

He said there were three main options: a coal-fired thermal power station; a nuclear powered station; and another dam project — the already shelved Gordon-above-Olga scheme.

Mr Gray said the last two options were the least likely to be adopted, but even the coal-fired station would cause an outcry.

Conservationists had already told the Government they intended to campaign vigorously against the coal-fired station.

"Personally, I am aghast at the thought of building such a power station myself," Mr Gray said.

CSO: 5100/7541

NUCLEAR CONSTRUCTION PROBLEMS EVALUATED

Construction Delays at Dukovany

Prague RUDE PRAVO in Czech 28 Mar 83 p 3

[Article by Vratislav Coufal, principal secretary, CPCZ District Committee, Trebic; Frantisek Balas, chairman of CPCZ Plant Committee, Dukovany; and Miloslav Vltavsky, RUDE PRAVO editor: "What Is Holding Up Construction at Dukovany?"; portions within slantlines in boldface]

[Text] /The construction of nuclear power stations is falling behind schedule. This fact is now widely known. The delays are causing great problems in providing electric power. To correct the problem it will be necessary for many other organizations to exert major efforts: mining enterprises, producers of energy in conventional power stations, and of course consumers, who will have to further rationalize consumption. Naturally, the question arises as to why construction has been delayed and who is at fault./

Large construction projects--and we have never yet carried out one as large as that at Dukovany--involve large problems, whose solution often interferes in a fundamental way with the production programs of entire sectors, involving not merely the restructuring of production equipment or product innovation, but primarily interference in the social sphere. It is quite insufficient merely to master the production of a specific construction or mechanical engineering product; it is also necessary to train large numbers of people in the necessary trades for the construction and installation work in planned fashion and with sufficient perspective. The same applies to the personnel of the investor organizations and planning organizations. /It is astonishing that the planning institute in Prague has sent no designers from the capital to the construction site. In this way they close the door to the future which the immense experience of those performing designer oversight at the construction site represent for the construction of the nuclear power plant at Temelin, for which preparations are now under way. It is essential to equip oneself in advance to train truly qualified specialists./

But let us turn to the questions which we asked at the start. The answer to them is too complex to be given briefly and definitively, because all who had some part in the preparation, planning, organization or management of the construction process or the work of the various contractors have made a contribution

to the delay in their own way. More graphically, we may state that /if in December the builders had handed over a few more of the facilities which they were scheduled to have ready at that time, they would have expunged the earlier sins of the designers and exposed new sins of the equipment suppliers. But we must not forget, even for a moment, that the construction project is managed by the investor, who is responsible to society for it, and that failure in a construction project is primarily his failure./

But it is harmful to oversimplify the question by laying all blame at the door of a single participant (in the past, it was primarily the builders who were singled out in some contexts), because it covers up the true state of affairs and makes it more difficult to correct matters during construction of the power plant.

A Proffered Hand

But we must still begin with the builders. To date, it is they who have carried out the bulk of the magnificent undertaking at Dukovany; they have been there longest, and therefore it is natural that they have the greatest number of difficulties and shortcomings to their account. At a recent party conference they were subjected to much criticism, most of which was entirely justified. /The builders' delegates had to listen to assertions that they had failed, particularly in December, to hand over certain facilities to the equipment installers and that they had not been flexible enough in replacing the workers whose contracts for participation in construction had expired. Also justified was the criticism that last year they slackened the pace they had achieved too early, that they did not make adequate use of multishift work and work on Saturdays and Sundays, and that they did not always make an attempt to fulfill their obligations, especially in material terms. The shortage of several trades was also criticized./

This is not the first time that some of these shortcomings have been criticized, and therefore conclusions must be drawn from them. It is difficult to maintain that the managers were not aware of the importance of certain facilities (even though they were designated as auxiliary) or were not capable of making up the loss of about 1,100 workers rapidly. In any case, these would not be sufficiently weighty arguments to excuse those who have fallen behind from responsibility or from an accounting for their faults. We must always seek methods of preventing shortcomings.

/By their work at Dukovany, the builders were able to hand on the cause to others, and they decidedly need not be ashamed of their achievement. Last year, they completed 100.1 percent of the plan and set a record by completing Kcs 1,075,000,000 worth of work; no aspect of the building of socialism has achieved such a volume of construction work in a single year./ They have made up the shortage of workers. They are rebuked for a shortage of certain trades, even though they have fully 460 (!) welders and hundreds of carpenters and ironworkers onsite. This will be extremely helpful in shortening the construction of the remaining three power production units, because these people are already experienced builders of nuclear power plant facilities.

Let us now turn to one of the concrete installations which was not handed over on time. The construction is finished, and all that remains for accelerated handing over is some finishing work, particularly several coats of paint. It is difficult to speed up these operations because of the need to protect the health of the workers. A contribution to this year's delay was made in February by a shortage of one component of the paints, as a result of difficulty at the chemical plant that was producing it. The only solution in this case was obviously to put off the finishing work until later. There is another point to be made here: /is it always necessary to expect 100-percent completion of the construction work? Must the process equipment contractors always wait until the last construction worker finishes the last brushstroke before they start?/

As a rule they wait for this last brushstroke primarily because it is more convenient. In an uncompleted facility, the builders are in the way if people are waiting for them to hand it over. But it is just at this time that the builders receive additional requests from the equipment installers and have to make certain changes in installations that have already been handed over, and it does no harm to the equipment installers if the structural modifications are made while they are installing their equipment. Complete construction readiness is thus sometimes a bit counterproductive. We will illustrate this point with several examples. One facility was completed with excellent quality in all respects, with all painting and the like. When the equipment contractor started, he had to break through the multiple coats of paint at many locations, because otherwise it would have been impossible for him to weld his equipment to the walls. In another case, the builders also had to remove part of the ceiling, because the 100-percent completion made it impossible for them to move in the necessary equipment.

'Covering One's Behind'

These examples, cited in the discussion at the party conference, indicate further untapped potential at the construction site. /Distrust between partners is a greater drag on a construction project than late completion of any of its components. More energy is spent on "covering one's behind" than on solving certain delicate technical or production difficulties. The verbal sniping and word games that are used in the records of discussions by the management organizations would be well out of the builders' dictionary. Separation of installation from construction work should not be allowed anywhere in the field, because nobody has extra time available for construction./ The delegate from Sigma demonstrated that it is possible to coordinate both activities in time and space, because his installers are working in this manner. The requirement for concurrent construction and installation work was supported by the conference, and it should gradually become part of the work routine, as is the case in the subsequent stage of construction.

/Its full practical incorporation will demonstrate the real readiness of the equipment contractors. But they are not always as ready as the project requires. This was noted by the delegates from ZPA [Machinery and Automation Plants] and Skoda. They stated that most of the contractors have incomplete deliveries on hand, from which certain components are missing./ There is

another important problem here: at a party aktiv meeting held in the middle of last year /attention was called to the fact that the equipment contractor should have about 6,000 workers onsite at the peak period. This year it is estimated that about 4,400 should be there; but only about half of that number, including temporaries, are currently onsite./ Thus, it is natural that in this state of affairs the individual equipment contractors carefully seek out every shortcoming of the builders, so that they will have readymade excuses for why they did not work better.

/The creation of true comradely relations between all participants in the project offers the greatest potential for eliminating delays in nuclear power plant construction. All party members and management personnel, regardless of enterprise affiliation, are responsible for active cooperation in this direction. Personal responsibility for the fate of the power plant construction project must absolutely take precedence over enterprise interests./

Not Present on Site

The investor organization must play a much more prominent role in this process, as was also stated at the party conference. Its role as the managing unit of the construction project is irreplaceable under our conditions. In addition it alone is capable of arbitrating knowledgeably between suppliers who disagree.

/This is a difficult task which requires a large contingent of experienced specialists. A little discussion suggests that while there are a few excellent people, the management contingent requires further highly skilled personnel. It is never satisfactory for these specialists to be in the enterprise office or in the offices of the higher level organizations: they must be constantly present at the project, for which the most important battle is now under way; it is impossible to directly command it from a distant location./ The investor, like the designers and both contractors, must develop people with sufficient experience who will have an instant effect on the construction of the station at Temelin. The experience acquired at Dukovany will make an immense contribution to the construction of subsequent power stations--even if they involve different types of equipment or more powerful equipment. For example, the builders state that lack of experience was a major factor in the inadequate pace of construction of the first power production unit. They had never done anything of the kind before, and accordingly they did not know how. The direct experience of organization of a construction project which they had obtained in a different enterprise was not the same thing as the first-hand experience of the organizers of construction processes or the personal experience of the welders, carpenters, ironworkers and other personnel working in the sealed zone and other important facilities. This hard-won experience is already making a positive contribution in the productive, timely construction of additional power production units.

/Many of today's difficulties have their roots in the past, in underestimation of the preparations necessary for building a nuclear power plant. If the investor does a bad job of mapping out the social program, the errors show up in the course of the entire construction and installation process./ Currently

at Dukovany there are difficulties in assuring that lunch and snacks are provided at reasonable times. Without the caterers, a considerable amount of time is lost by the people at the individual workplaces; but neither the party representatives nor the foremen are responsible. There are insufficient places in the locker rooms, and if the full number of installation workers arrive, there will be a difficult problem in providing them with accommodations, even though additional beds over and above the approved number are being built.

We should not end this list of deficiencies with the statement that initially a project involving such a large number of people was not envisioned. This is true, but initially a much simpler and cheaper project was conceived. Development and the requirements derived from it have meant a considerably more demanding project, and there have been considerable changes, particularly on the construction side, but also in process equipment. This has been of fundamental importance in developing the construction schedule and the resulting changes in the concentration of workers. If it has already been necessary to make 1,100 additions and changes, obviously we cannot operate with the original assignments.

/The project has entered an important period, in which it will be necessary to subordinate enterprise and ministry interests to the ultimate objective of putting the individual units into operation by the new deadlines. The resolution of the project CPCZ conference and other suggestions made at it must be used for more effective management of the project and the individual collectives. Now, more than at any other time, it is important to have rational utilization of everyone's efforts and to have everyone be present onsite and show initiative. It is necessary to work without big talk, but even more selflessly, because further postponement of the deadline for completion of the first unit is not possible./

Nuclear Power Reactor Safety

Prague RUDE PRAVO in Czech 28 Mar 83 p 5

[Article by Zdenek Votruba: "For Reactor Safety"]

[Text] A primary condition for the absolute safety, reliability and economical operation of power reactors is shielding from the neutrons and gamma rays liberated by the fission reaction. In order for the producers to deal with this radiation, there must be sufficient data on its quantity and quality. The socialist labor brigade, 28 members strong, of the reactor physics division of the Skoda Concern in Vochov near Plzen is applying the necessary measuring techniques. For this purpose it is equipped with the first reactor of Czechoslovak design and construction, the SR 0 training reactor.

On first seeing it, we were not able to help a certain disappointment. How could this "kettle," a few meters high, with an output of a few kilowatts, be used to train Skoda's first generation of experts in applied physics and reactor physics and to organize a nuclear program? "The small dimensions are deceptive," said the division head, Eng Karel Cerny, in answer. "In building it we used everything that is best in reactor physics anywhere in the world, and it operates

with absolute safety and reliability. In 12 years of operation there has never been a breakdown or any event indicating the danger of one. Particularly valuable for research is the fact that it allows access to the core and to the control and monitoring elements."

We climbed up on it. It was true: everything could be seen with perfect clarity through the transparent cover. There was no time for a long look; we quickly left the reactor to make room for the personnel monitoring the processes inside it. Not, of course, with bare hands, but by means of instruments, of which the ones that they themselves have developed over the course of years are unique in the world. They include a microcalorimeter for measuring heat values within the core, similar to a pencil in shape and size. "This is, in fact, its main advantage," pointed out Eng Frantisek Boucek, "because by moving it around we can reach any location in the core and compare the readings so as to get an idea of where the nuclear fuel is not being sufficiently utilized. This is important for further development and design of reactors."

The collective has reaped equally important results from its effort to develop new measuring methods. For example, the process developed by a group headed by degree-holding physicist Petr Marik makes it possible to determine the energy of neutron radiation more precisely than previously used methods or calculations by the most modern computers. Engs Karel Cerny, Pavel Beranov and coworkers have succeeded in finding a method of recording an image of the passage of neutrons through the material and evaluating it in numerical terms. "Neutrons are a good servant, but a bad master," said Comrade Cerny of the social importance of the method. "While the fission reaction cannot proceed without them, if they leave the core uncontrolled they threaten human health and have a negative effect on the life of the reactor. Our method enables us to determine quickly when and where measures must be taken to control them, and also to determine if a power reactor can be used for longer than was initially estimated. In this case, the savings would amount to tens of millions of korunas."

But the mission of the reactor physics department is not only research; it also involves monitoring, solving problems of protection against harmful radiation, and handling and management of fissile materials. Thus, it plays an important role in training specialists, particularly nuclear power equipment. "In this work, the reactor is an invaluable assistant. After all, there is a difference, especially phychological, between working with a simulator and working with equipment in which the fission reaction is actually taking place," said Eng Milan Kveton with a smile, as he turned a knob on the control panel and increased the reactor power to the level required by those who were monitoring the course of an important experiment.

"That's true, but what if a trainee gets confused and fouls something up," we objected. "This cannot happen," was the answer. "Even the very startup of the reactor requires that 17 monitoring points be turned on; each of them automatically blocks the startup if there is any deviation. The same is true of reactor control during operations: not only of our reactor, but of all power reactors which are or will be in operation here, because we are continuously improving our safety measures."

"Time is passing, lads, and it will soon be time for the meeting," sais a voice from the corridor. We quickly take our leave, for we see that the researchers have to husband their time as carefully as saffron. The success they have achieved in developing new measuring methods and processes must be further developed, and in addition they are carrying out a number of other demanding tasks related to current and planned construction of other research reactors, e.g., in Rez near Prague, and two VR-1's for CVUT [Czech Institute of Technology] Prague and for the Bratislava Advanced School Research Center. They are not only involved in consultation and transmission of their rich experience, but also participate directly in the solution of problems related to construction.

8480
CSO: 5100/3021

CNEN HEAD DENIES SUSPENSION OF ANGRA-II, III PROJECTS

Sao Paulo O ESTADO DE SAO PAULO in Portuguese 30 Jul 83 p 26

/Text/ Rio--The chairman of the National Nuclear Energy Commission (CNEN), Rex Nazareth Alves denied in Rio yesterday that the government has decided to suspend work on the Angra-II and III nuclear plants, even recognizing that there is an overall commitment today to help the country overcome its economic crisis.

Even so, he pointed out that the Brazilian nuclear program was adapted to the new economic framework, that is, with smaller disbursements of funds because "it is a case in which everyone has to recognize the situation we are going through."

Speaking to the students of the War College (ESG), the CNEN chairman explained the reasons why the Brazilian nuclear program will be reduced in intensity. But he pointed out that at the present time, that program is already in a position to generate its own funds by means of exports of components for the construction of plants.

He stressed also that development in the nuclear area will be of great importance for the generation of alternative energy and to open new fronts in foreign trade. Nazareth Alves said that in the specific case of exports, the agreements with Argentina are of great interest to Brazil because the hydroelectric potential of that country is small "and it has oil marginal to its needs, thus, the reason why Argentina continues the construction of nuclear plants at a more intensive rate."

Asked if the government's decision to suspend the Steel Railway project may not be the beginning of the deactivation of programs considered costly and of questionable interest for the development of the country, the CNEN chairman refused to answer, alleging that he did not know the reasons that led to the suspension of that project. "Up to this time in the nuclear area, I have not been informed of anything in that regard and I do not believe that that will happen."

He added that the programs in the nuclear sector will be implemented normally because some goals were approved in the country this year, such as the autonomous production of radioisotopes "so indispensable for the diagnosis of Brazilian patients through nuclear medicine, as well as the massive nationalization of production of the largest possible number of items of equipment for that sector."

The CNEN chairman revealed that the Brazilian Nuclear Corporation (NUCLEBRAS) is exporting pressure vessels to Argentina and that Brazil is also participating in international bids in the area of mining-industrial complexes through the Andrade Gutierrez and Natron companies with the consultation of the CNEN and NUCLEBRAS.

Emergency for Angra

Nazareth Alves revealed also that the emergency plan for any type of accident at the Angra-I plant is in full operation, ranging from actions of a technical nature to the removal of all people within the maximum limit of 15 kilometers.

He explained that if an accident should occur at the Angra-I plant, the emergency plan provides for a period of 48 hours for the evacuation of the local population within a radius of up to 5 kilometers. Within the radius of 5 to 10 kilometers, there will be 8 days time and from 10 to 15 kilometers, 30 days.

The CNEN chairman added that the emergency plan covers the whole area between Rio and Sao Paulo but "with reference to those two cities, the effects of accidents will not have major consequences."

8711
CSO: 5100/2083

NUCLEBRAS TO RECEIVE $80 MILLION LOAN FROM FRG BANKS

Sao Paulo FOLHA DE SAO PAULO in Portuguese 10 Jul 83 p 41

/Article by Paterson Pereira/

/Text/ Brasilia--The president of the Brazilian Nuclear Corporation (NUCLEBRAS), Dario Gomes, is scheduled to return to the Federal Republic of Germany (FRG) in the month of August to sign a new loan of $80 million to be granted by a group of German banks. Dario Gomes told FOLHA that the granting of a new loan by the German banks is "a confirmation that those organizations understand Brazil's difficulties."

Last June, the president of NUCLEBRAS signed a contract in Bonn for loans in the amount of $80 million granted by a group of German banks headed by the Dresdner Bank. In that first visit to the FRG in the capacity of president of NUCLEBRAS, Dario Gomes had a meeting with 12 German bankers to whom he explained the progress of the Brazilian nuclear program, especially in terms of the country's financial difficulties. "They understood our problems so well that they promised a new loan of $80 million the contract of which will be signed in August," said the NUCLEBRAS president.

Angra-III Project

Dario Gomes revealed also that work will begin on the Angra-III nuclear plant next September, first with excavations for the removal of material intended for the construction of an earthen embankment in front of the plant. At that place, the ground next to the plant has a height of 3 meters above sea level and NUCLEBRAS plans to raise it to 11 meters. For that work, the company has an appropriation of 1.8 million cruzeiros this year. Dario Gomes' prediction is that the foundations will be begun next year.

The cut of 25 billion cruzeiros in NUCLEBRAS' budget for this year (it dropped from 172 to 174 billion cruzeiros) is being distributed among all of the company's projects in order not to significantly affect the timetables. One of this year's priorities is the continuation of the Angra-II nuclear plant project, the investments of which should reach the figure of 31 billion cruzeiros.

The NUCLEBRAS president denied that the competitive bids for the Iguape-I and II nuclear plant projects have been postponed more than 1 year, as was reported, because "it had already been decided since last year that that bidding would not be held until the second half of 1984."

8711
CSO: 5100/2083

POSSIBLE PURCHASE, USES OF NEW REACTOR DISCUSSED

Bogota EL ESPECTADOR in Spanish 11 Jul 83 p 9-A

[Article by Ernesto Villarreal, director of the Nuclear Affairs Institute]

[Excerpts] Colombia, unlike other countries in Latin America, has spent little on its scientific and technological development. Under 2 percent of its gross domestic product is earmarked for such development. This is much less than what is spent in countries such as Argentina, Mexico, and Brazil. Nonetheless, the government is interested in an industrial revival, which would require that programs in metallurgy, quality control, etc. be conducted within a broad technological development plan.

1965: in Colombia

In 1965 a 20-kW research reactor was installed in Colombia at the IAN [Nuclear Affairs Institute]. This is one of the smallest reactors, in terms of power, found anywhere in Latin America. Still, this reactor has been one of the basic tools used for the development of nuclear technology programs in our country. Because of its characteristics, this reactor has been used primarily for nuclear chemistry programs, specifically, for the production of radioactive materials used in industry and in hydrology, and for the chemical analysis of samples by means of irradiation. The reactor has also been used for some reactor physics studies, although its low power has placed great limitations on the development of more extensive programs in this field.

The development of other programs for the use of nuclear energy in Colombia, in fields such as nuclear medicine (diagnosis and treatment); food processing technology (conservation of perishable products, the inducement of mutations to produce new

species, etc.); hydrology (quantification of surface and underground water resources, detection of leaks in dams and pipes, etc.); quality control (gammagraphy and radiography); the development of vaccines and the sterilization of materials by using nuclear technology have all required that radioactive materials be imported, since it has not been possible to produce these materials in the IAN reactor. However, it is not feasible to import all the materials needed, since some of these materials have too short a usable life. A large percentage of all these materials could be supplied by Argentina, Brazil, and Mexico.

The programs mentioned in the preceding paragraph have undergone a rapid growth in recent years, and their development is expected to continue at a similar pace during the next few decades.

What Remains to Be Done

The lack of a tool such as an adequate research reactor has greatly hindered the development of programs of importance for the development of Colombia, such as the following:

a. Physics research: studies of the structures of different materials by means of radiation; the effects of radiation on the physical properties of materials.

b. Medical and biophysical research: the effects of neutrons and gamma radiation on cells and on microorganisms; the genetic effects of radiation.

c. Chemical and biochemical research: the effect of radiation as a catalyst of chemical reactions in hydrocarbons; the effects of high doses of radiation; the development of uranium fuels.

Such programs have not been begun, primarily because of the low power of the IAN reactor and because of the lack of experimentation equipment.

The institute's research reactor has been used, even though on a small scale, to train a good number of Colombian professionals and technicians in its use and in the application of a variety of nuclear techniques, especially in industry. These professionals and technicians have then left the institute to apply the knowledge imparted there to other fields in which such skills are needed by Colombia.

Finally, we must admit that there must be a greater degree of coordination and integration between the universities and the IAN in order to make better use of the few experimental facilities offered by the present reactor. The university community, which has people trained in different areas, devoted to the development of a variety of projects, should be one of the main sources generating research and studies on the uses and effects of nuclear energy. It is quite possible that with a little imagination, the institute's reactor may be used to develop some programs for research in fields such as physics and chemistry.

New Reactor

Since the IAN's work in the field of nuclear energy, with the use of this 20-kW reactor, has been a first step, and since the nation must develop its scientific and technological sector, by becoming involved in research on and the use of nuclear energy in areas as diverse as those discussed in this article, in programs which will benefit broad sectors of our national economy, the institute has requested that the government provide it with a new, medium-power research reactor. This reactor would be used for training personnel, for educational programs on nuclear technologies, for producing radioactive materials, and for basic and applied research. The government has decided to engage in negotiations to acquire such a reactor from Argentina.

If these negotiations are successful, the IAN will have a reactor with a power of several megawatts, laboratories for the production of some radioisotopes and radiopharmaceutical products, metallurgy labs, and other facilities required for nuclear development. At the same time, Colombia will also be preparing to handle complex technologies, such as nuclear fission to be used to generate electricity, and ultimately, nuclear fusion to be used for the same purpose.

Because of its power, this new research reactor would have suitable experimentation facilities so it could make a significant contribution to the nation's technological program, since we have a limited amount of resources which must be devoted only to projects of significance for the nation or for its interests. This new facility should greatly aid in the process of training and improving technical personnel. This facility will deal on a constant basis with problems in electronics, welding or soldering of special materials, parts maintenance, equipment maintenance, operations with radioactive materials, radiological protection, and management and coordination of activities.

Proceeding with this project to build the reactor and its related laboratories would provide a meaningful diagnosis of the state of development achieved by Colombia's engineering and industry, because of the special quality of the construction materials to be used, the optimum level of quality control which will be required, the execution of designs, and participation in this work, etc., all of which will be handled by Colombians to the greatest extent possible. And in areas in which we do not have the requisite knowledge or technology, it will be possible to acquire these skills by means of this association with foreign companies.

Peaceful Use

As Colombia is covered by the Safeguards Treaty, which forms part of the Treaty of Tlatelolco, guaranteeing the peaceful use of all nuclear technologies which we acquire, and of any applications we may make of nuclear energy, the acquisition of a new reactor and of its complementary laboratories will help us to achieve objectives such as the following:

a. To ensure that there is an ongoing nuclear research and development program for peaceful purposes;

b. To improve our level of development in the nuclear field, especially our position in Latin America;

c. To increase the numbers of scientific and technical personnel specializing in the nuclear field and to encourage them to remain in Colombia;

d. To help to develop Colombian science and technology, making use of the new achievements brought about in the nuclear field;

e. To prepare ourselves for the time when nuclear power may contribute to our electricity supply.

7679
CSO: 5100/2082

PRESS REPORTS PROBLEMS SURROUNDING TARAPUR PLANT

Limitations on U.S. Agreement

Madras THE HINDU in English 1 Jul 83 p 1

[Article by G. K. Reddy]

[Text] NEW DELHI, June 30--The visiting U.S. Secretary of State, Mr. George Shultz, assured the Prime Minister, Mrs. Indira Gandhi, and the External Affairs Minister; Mr. P. V. Narasimha Rao, today that President Reagan intended to take "appropriate action" to make available the safety-related spare parts for Tarapur that were not available from elsewhere.

The assurance came at the very outset of the day-long discussions at which the two sides covered a wide range of international, multilateral, regional and bilateral issues relevant to Indo-American relations.

It was not explained by the U.S. Assistant Secretary of State, Mr. John Hughes, who briefed the Press on the subject, what exactly Mr. Reagan proposed to do to overcome the Congressional hurdles, but Mr. Shultz is reported to have told Mrs. Gandhi and Mr. Rao that he was already in touch with the Congressmen concerned on the subject. He sounded quite confident that the administration would be able to obtain the necessary support and cooperation for the U.S. President's decision.

Ticklish Issue Out of Way

The U.S. Secretary of State was apparently aware that one of the two Tarapur reactors was out of commission because of the non-availability of some critical spare parts like mechanical seals for the water pumps and source range and intermediate range monitors for incore monitoring of the flux which are not available from West Germany or any other country in the West with American-designed nuclear power plants. So he availed himself of the very first opportunity to get this ticklish problem out of the way before commencing substantive discussions on other issues.

The negotiations with West Germany have been progressing smoothly for the supply of the bulk of remaining parts running from 30 to 40 items, and representatives of a West German firm have already visited the Tarapur plant to get

an idea of the exact requirements. This time the Government of India is not repeating the mistake of leaving anything ambiguous or vague about the nature of the safeguards to be applied by making it abundantly clear to all concerned that these spares, like the enriched uranium from France, would be supplied within the framework of the 1963 Indo-U.S. agreement.

But until the whole arrangement has been reduced to writing and the necessary letters exchanged with the new suppliers, one can never be too sure that no last minute complications would arise as it happened in the case of the fuel supply arrangement with France.

The following is the text of the brief statement made by Mr. Hughes at a joint Indo-American press briefing at the end of the day-long discussions:

"The U.S. Secretary of State and the Indian Minister of External Affairs discussed the question of safety-related spare parts for Tarapur.

"Both the U.S. and India are concerned for the operational safety of the reactor and for the health of the employees of the plant and for the residents of the community in which they operate.

"In so far as the need for replacement of parts to ensure these objectives is concerned the Secretary indicated that the U.S. is prepared to take the necessary actions to supply those parts which are not available from elsewhere.

"The Government of India shares the confidence of the Government of the United States that this problem can be satisfactorily resolved".

Careful Wording

It is quite obvious from the careful wording of this statement that the U.S. has agreed to provide only the minimum safety related parts required for running the plant. The U.S. experts feel that there is no need to change the entire water pump, since the recirculation system could be run with the new mechanical seals to prevent leakage of radioactive fluids from the reactor core.

If the whole pump has to be changed, as India would like to do, then the highly radioactive core of the reactor will have to be dismantled and stored safely for which there is no space at present. And it would raise awkward questions about India's right to reprocess a part of the spent fuel to make room for the storage of the core.

The Indian spokesman said that "We are satisfied the problem has been satisfactorily solved". As soon as the modalities were completed, India would start getting the spare parts from other sources. And he hoped that, in the case of the few remaining ones, the U.S. would act with due sense of urgency to meet India's urgent requirements.

Political Correspondent's Report

New Delhi PATRIOT in English 3 Jul 83 pp 1, 7

[Text]

THE widely-advertised "solution" to the "problem" of supply of spare parts for the Tarapur Atomic Power Station is one more instance of a breach of promise by the United States and proof of the Reagan Administration's delaying tactics in the matter, knowledgeable sources said on Saturday.

The tactics is aimed at "influencing" India's policy in the nuclear field, these sources added.

The breach of promise is in relation to contractual commitment made by the United States under the 1963 Indo-US agreement on Tarapur. The delaying tactics is inbuilt in the so-called solution which requires India to knock on the doors of one country and then another everytime the spares are required.

In fact, the spares can be supplied only by General Electric, a US company, or its subsidiaries. India is thus required to be continuously dependent on the "goodwill" of the US administration and the American company.

The essence of the decision agreed upon during the visit of US Secretary of State George Shultz is as follows: India can buy the critically needed spares from any country or company it wants (as if a permission from the United States was necessary) and if it failed to obtain these then President Ronald Reagan will do the "needful" in the matter (a vague assurance which has little value in the light of India's past experience).

It has been expressed that India may get these spare parts from West Germany or Italy. There is synthetic excitement that the spare parts issue has been resolved in the same manner as the nuclear fuel issue was resolved. A closer scrutiny reveals that the Indian officials have been somewhat in a hurry to express their "satisfaction" at the solution—this is reminiscent of the haste shown on the question of supply of nuclear fuel to Tarapur.

Prior to Prime Minister Indira Gandhi's visit to the United States last year an advance Indian party had gone to Washington to negotiate the issue of fuel supply. At that time Indian officials were assured by their American counterparts that no sooner the issue of fuel was settled it would take about six weeks to process the supply of spares. Soothing noises were made by the US side that the Nuclear Regulatory Commission had already been alerted and in view of its likely consent, congressional approval would not be necessary. Why should there be any difficulty since the spares were for most part safety related, the US officials murmured. Indeed within a few weeks of the formality of an exchange of notes the spares question would be settled, they promised. The assurance was unambiguous and specific.

Indian officials should have obtained from the United States a written assurance on supply of spares. This was not done, because the Indian side was then in a hurry to be satisfied, as it is now, and was apparently not sufficiently alert about the real US designs which would unveil very soon.

Within a few weeks, instead of supplying the spares the Reagan Administration backed out of the promise. The US officials began to say that they had not given this assurance. The matter was raised twice, also during US Under Secretary of State Eagleburger's visit to this country. The American reply was curt and cryptic 'You must have misunderstood us', they told the Indians.

Spokesman of the US Embassy in New Delhi William Miller was quoted in the Washington Post as saying that at no time did the US Government officials give assurances or otherwise indicate that a supply of spare parts would be made available at any specific time. He also claimed that the US Government did not have a contractual obligation to supply spare parts for the Tarapur nuclear reactor.

US Ambassador Harry Barnes joined the chorus in an interview, he maintained that the US was under no obligation to supply spare parts to India. He categorically denied that any assurance was given to India during the negotiations for third country fuel supply.

Thus on 29 July, last year, India released the United States from its contractual obligation to supply the nuclear fuel for Tarapur and agreed to substitute it by France

But it obtained no written assurance on the spares. So the US began to try to get out of that commitment also.

According to experts, this was intended to delay the supply. This design is likely to be pursued even now. According to experts, the delay in supply of spares is calculated to secure India's abandonment of its reprocessing rights. Under the 1963 agreement, the United States has no veto on reprocessing. Article II E of the Tarapur agreement envisages that when the spent fuel 'requires reprocessing', such reprocessing 'may be performed in Indian facilities upon a joint determination of the parties that the provisions of Article VI of this agreement (relating to safeguards) may be effectively applied'. Thus the US can only ask for effective safeguards and cannot stop India from reprocessing. The US cannot object that India does not have effectively safeguarded facilities. US Atomic Energy Commission official Myron B Kratzer had acknowledged it in 1968 in a writen communication to an official of the Bhabha Atomic Research Centre that 'the information submitted (by India) to the IAEC's office on safeguards and materials management indicates that the design of India's proposed nuclear fuel reprocessing facilities permits effective application of safeguards'.

In spite of this categorical position, the US later raised a controversy over interpretation of the provision of 'joint determination' for the reprocessing of spent fuel and wanted this to be settled before arranging to resume supply of the spares. But the fact is that in terms of the agreement entered by India with the IAEA in 1980, the monitoring responsibility of the Tarapur plan devolved on the International Atomic Energy Agency. India invoked Section 10 of the agreement and sought and obtained INFA's approval. Prior consultation or consent of the US is not necessary before reprocessing is undertaken. It is for the IAEA to ensure through its monitoring arrangements that no fissionable material was turned out while reprocessing spent fuel. By obstructing or delaying the supply of spares the US is seeking to achieve the objective by pressure.

Since 1979 the US had not supplied any nuclear or non-nuclear spare parts that are required for the reactor equipment and power generation turbines. The nuclear items include mechanical seal assemblies for the recirculation water pumps and source range and intermediate range monitors for measuring the flux inside the reactors during fission. The non-nuclear spares are for the turbines, swtich-gear and other equipment used for power generation and transmission from the plant.

The 'solution' that India should in the first instance seek spares from third countries must be seen in the light of the nuclear fuel experience.

The French agreed to supply the fuel as surrogates for the Americans with the framework of the 1963 agreement, but soon began to insist that safeguards more stringent than those agreed between India and the US be applied to Tarapur. This is demanded in accordance with the London Club's 'Guidelines for Nuclear Transfers.'

Knowledgeable sources point out that West Germany and Italy are also members of the Club and spares are very much covered by its guidelines. But in the case of fuel the US accepted its contractual obligation to supply and thus facilitated France stepping in its shoes as a mere sales contractor bypassing the Club's requirement. In regard to the spares, however, the US has flatly denied any obligation at all. In whose shoes can West Germany and Italy step in then? Perhaps, in the immediate context, this legal hurdle can be surmounted. But these or other agreements could be invented whenever the US or its allies want to put pressure on India.

In fact, according to the Nuclear Control Institute of the US of the three countries approached by the Reagan Administration to supply spare parts for Tarapur, namely, Japan, Italy and West Germany, Japan had already refused to oblige the US.

The reason why the US is trying to 'solve' the spare parts problem by involving third countries is not far to seek. According to the New York Times, the US State Department is of the view that Washington would lose what little leverage it had over Indian nuclear policies if it ceased to be a supplier of nuclear materials for New Delhi.

According to knowledgeable sources, the US wants to prevent India from pursuing a bold policy in the nuclear field. Hence these machinations. Some of the spare parts can be obtained only from the American firm General Electrics, which has supplied these to the Tarapur atomic power plant. Already ground is being prepared for objections of all sorts. The General Electrics has expressed the view that 'although

some replacements could be purchased from non-US sources, the US suppliers of the original equipment are understandably concerned as to the quality—and therefore, perhaps the safety—of parts purchased from third countries.

Dillydallying by the US has already hindered full utilisation of the 30 MW Tarapur plant. Now the US has forced India into a situation where it will remain vulnerable to pressures, delays and other machinations, even if some supplies are made available immediately.

Arrangements for Spare Parts

Madras THE HINDU in English 5 Jul 83 p 1

[Article by G. K. Reddy]

[Text] NEW DELHI, July 4.

West Germany is prepared to supply the bulk of the spare parts required for Tarapur more or less on the same conditions on which France has agreed to provide enriched uranium fuel for the plant within the general framework of the 1963 Indo-American agreement.

As a member of the London suppliers group it has no doubt an obligation to ensure that the spares will be used for prescribed purposes and under adequate International Atomic Energy Agency supervision during the remaining 10 years of the 1963 agreement, but relying on the French precedent, West Germany is not insisting on any additional safeguards for the supply of these parts.

There is a grey zone in the vaguely worded Indo-French agreement of November 27, 1982, which says that during the life of the 1963 agreement, which means that in the course of the next 10 years before the expiry of the agreement France and India "shall consult with a view to agreeing on the arrangements to ensure the implementation as may be necessary of the provisions" relating to the stipulation that the enriched uranium fuel and the by-products derived from it would be used only for peaceful purposes. The French Government pressed very hard, until the last moment, for a supplementary exchange of letters spelling out this provision more precisely to conform more closely to the updated IAEA requirements, but the demand was dropped at the intervention of the French President, Mr. Mitterrand, in the face of the firm Indian refusal to agree to any additional conditions.

Commitment: The proposed arrangement with West Germany also would include some such vague commitment to engage in further discussions in due course, but in India's view it would not involve an application of the pursuit or perpetuity clauses because of the clear understanding that these spare parts, like the fuel supplied by France, are to be provided within the framework of the 1963 agreement. But there is an inherent risk that the United States, France and West Germany can exert collective pressure if they choose to for whatever reason, at some point in the future to re-interpret the 1963 accord to imply that the mere expiry of the agreement does not release India from the follow up obligations of it.

At this stage, India is not looking too far ahead to visualise the kind of difficulties that could or might arise over the interpretation of the entrenched provision in the agreement with France. It is more concerned at present over evolving what is deemed to be an acceptable basis for obtaining the spare parts from other sources in terms of the understanding reached with the United States.

A West German team has visited Tarapur to identify the spare parts required for Tarapur and indicate to the Federal Government in Bonn which of these could be supplied from the existing stocks of the U.S.-designed nuclear plants in that country or manufactured to U.S. specifications. The team went back with the impression that the bulk of the Indian requirements could be met by West Germany during the remaining 10 years of the 1963 agreement, with the exception of a few generic items that must necessarily come from General Electric Co (GEC) which built the Tarapur plant.

Formalities: But before West Germany could proceed further with the finalisation of this arrangement, it will have to complete the legal formalities of obtaining the clearance of the U.S. manufacturers to transfer or make any spare parts under licence. These formalities can be completed only after India, West Germany and the U.S. have exchanged the necessary letters as was done when France was brought in as alternative supplier of enriched uranium.

These formalities will take some time since it is not yet clear how the Reagan Administration proposes to meet its residuary obligation of supplying the few crucial items that are not available from West Germany, Italy or other sources acceptable to it. If it is going to drag its feet using Congressional hurdles as an excuse, there would be a consequent delay in finalising the Indo-German agreement.

At the moment nobody in Delhi seems to have any idea how long this tortuous process is going to take, and whether in the end India will be back on square one again.

'Unreliability' of Washington

Madras THE HINDU in English 2 Jul 83 p 1

[Editorial]

[Text] IT IS AN achievement of public relations, if nothing else, that an impression has been created in connection with the visit of the U.S. Secretary of State, Mr. George Shultz, that the problem of Tarapur spares has been "satisfactorily solved." What has been promised is "appropriate action" by the Reagan administration to make available those "safety-related" spare parts which are "not available elsewhere." The qualifications and loopholes suggested by the official wording are such that it would be rash to conclude from this that the Tarapur atomic power station can rely on the United States as a source of reliable supply even in this limited matter. What is worse, it is not clear if any further concessions are expected from India — on matters such as reprocessing — in return for this qualified offer of a source of supply of last resort, whereas there should have been an insistence on Washington performing all its obligations under the 1963 bilateral and the 1971 trilateral accords if it wanted India to recognise any locus standi for it in the matter of Tarapur. (Actually, there is no longer any reason for the Reagan administration to ask India to bend; has not the oft-cited "obstructionist" attitude of Congress on nuclear exports become a non-issue now that the U.S. Supreme Court has removed that "impediment" through a judgment delivered a few days ago striking down Congress's veto power over executive action?). Since 1971, Washington's performance in the field of bilateral nuclear cooperation has been affected by increasing degrees of unreliability; over the last three years its *non-performance* of obligations laid down in an international agreement with the force of a treaty has introduced a significant problem into bilateral political relations. In 1981 it served notice on the Government of India of its decision to discontinue the fuel supply relationship; after several rounds of negotiation, all that India obtained was a no-objection certificate from the non-performer to bringing in France as a substitute supplier of low-enriched uranium, with whom terms had to be negotiated after further tough bargaining; till date India's right to reprocess the spent fuel that belongs to it is contested stickily by the U.S. although it did promise during the 1981 negotiations not to make this an issue. Such complications and travails form the recent background to the nation's efforts to take care of the minimum requirements of its first nuclear power station.

All this suggests that the idea of running hither and thither — to new country-sources such as West Germany, Italy and Japan and, where they cannot deliver, to the U.S. — is not the ingenious and brilliant answer it is made out to be by Indian political diplomacy. For one thing, the diverse list of spare parts needed by Tarapur (the record shows at least 24 items pending with the U.S., including detectors, spares for the reactor recirculation pump, water pumps and the pressure relief valves and even radioactive standard reference material needed in environmental survey work) raises the question of technical suitability and wisdom which experts rather than diplomats or politicians should be allowed to judge. Secondly, nuclear supply, including that by the Soviet Union, continues to be governed by the rules drawn up by an exclusive suppliers' club and the International Atomic Energy Agency (which has recently cited India in connection with one case of lack of satisfaction over the application of safeguards) takes it upon itself to see that no one transgresses the discriminatory lines that rule nuclear commerce. In this context, what conditions or implied conditions will accompany the supply of spare parts (some of them cannibalised perhaps from Tarapur vintage systems) from West Germany or Italy? And what will be the status of the 1963 agreement with so many players in the picture on the other side? Is there any need at all to subject the Indian nuclear programme to such a tortuous course? It is important for the policymakers to be resolute and especially clear about the principles of the deal they are in the process of striking in this sensitive field. If the alternative to such a compromise is the closing down of the Tarapur nuclear power station, that ought to be considered in the national interest in view of the fact that its current contribution to the power requirements of Maharashtra and Gujarat is quite modest, and it has, despite its recent travails, provided more than adequate return for the nation's investment in it. Such a course — which would, incidentally, leave India free to do whatever it wishes with all the Tarapur items, including the substantial quantities of plutonium available from the spent fuel — would be preferable to any action that suggests a weakening of the national nuclear policy stance that has so far succeeded in standing up to external pressures.

Termination of Agreement Recommended

Bombay THE TIMES OF INDIA in English 7 Jul 83 p 8

[Article by Inder Malhotra]

[Text]

WISHFUL thinking and make-believe have often led to disappointments in this country's diplomatic dealings with friends and foes alike and this seems to be happening once again in relation to the talks with the U.S. on the vexed question of spare parts for Tarapur. Bland official statements that the issue has been "satisfactorily resolved" during Mr. George Shultz's recent visit to New Delhi are simply not warranted by facts and yet they are being persisted in. There is no doubt that the U.S. secretary of state wants the issue to be out of the way. But to appreciate this is one thing, and to pretend that the desired denouement has already been reached quite another.

Last year sudden and unexpected difficulties had arisen over even the relatively simple and straightforward agreement on the transference to France of the U.S. responsibility to supply low-enriched uranium for Tarapur though these were eventually overcome. This called for caution in examining the offer made by Mr. Shultz about spare parts. But evidently, in certain quarters, hope usually triumphs over experience which alone can explain why even the manifest ambiguities and pitfalls in what has been promised by the U.S. secretary of state have so far been generally overlooked.

In the first place, the very text of the official announcement made on behalf of Mr. Shultz — at a joint Indo-U.S. press briefing by Mr. Mani Shankar Aiyar and Mr. John Hughes, spokesmen of the Indian ministry of external affairs and the U.S. state department, on June 30 — is riddled with vagueness that can easily lead to protracted argument in future. For instance, Mr. Shultz has not committed the U.S. to giving India the spare parts it is unable to acquire from elsewhere. He has only pledged that the U.S. would take "appropriate action" with a view to doing so. Moreover, even this promise is confined to safety and health-related spare parts. Other components that may be needed equally urgently are no concern of the U.S.

Search For Spares

The situation becomes even more uncertain when one looks at the clarifications offered by Mr. Hughes in reply to questions put by American correspondents present at the joint briefing. And since, despite their importance, these remarks have gone practically unreported, it is necessary to quote them at some length from the transcript of the briefing. One of the reporters was quick to raise the pertinent question: "what determines if they (the required spare parts) are not available elsewhere? Is it time? Is there a deadline when those are or not available?

Mr. Hughes replied: "I don't know if there is a deadline on determining when those parts are available.... it's not as though the research into the availability of parts is starting from scratch now. That research has been going on (But) I cannot give you a time-table on when."

When the reporter persisted, Mr. Hughes said he presumed that the search for spare parts in third countries would go on and added: "The answer — if you are saying do we know whether specific parts will be supplied by the United States — is no. It is conceivable that all the parts might be available from other countries."

Another reporter then asked: "Does it cause any concern to the U.S. that some of the countries mentioned have plants which have closed down and therefore the spare parts available may be obsolete and hence the danger of radiation would continue." But Mr. Hughes pleaded that he was unable to answer this question.

The next question was blunt: "What if Congress does not approve of the U.S. itself supplying the spare parts? What does the administration intend to do?"

"I do not think", replied Mr. Hughes, "I am going to go beyond our statement that the President of the United States is firm in his decision to move forward in this way. But I am not going to specify how, what his strategy will be and how he will approach the question in terms of Congress."

A two-in-one question followed: First, if the spare parts were necessary for safety, "why won't the United States supply them up front?" And secondly had India given any "reassurances" Mr. Shultz could carry home to "call off some of the opposition in Congress?"

Taking up the second question first, Mr. Hughes said he had nothing to add to the original statement. "In relation to the first part of your question," he added, "there are legal restraints upon the

U.S. in connection with non-proliferation. That explains why we are suggesting that the spare parts come from some other countries first, if that is possible."

Reprocessing Of Fuel

"If there are legal restraints", shot back an American journalist, "how can we assure India that we will be able to supply these parts?"

Mr. Hughes replied: "Well, what we are assuring India is that the President is going to take the appropriate action. The action that he will take in so far as Congress is concerned remains for him to decide."

Surely all this cannot sustain the cosy belief that the issue is as good as settled. Nearly 50 members of the U.S. Senate and House of Representatives are already clamouring that no spare part be given to India until it signs the non-proliferation treaty (NPT), and there is no escape from the fact that some critical spare parts at least can come from the U.S. alone.

To cap it all, Mr. Shultz has himself chosen gratuitously to raise the issue of reprocessing of spent fuel that has piled up at Tarapur.

If an attempt is in fact made by the U.S. to link the reprocessing issue with the supply of spare parts, then the search for spares may well be abandoned because there can possibly be no meeting ground between the present U.S. position on reprocessing and the consistent Indian stand which the U.S. had never disputed during the years since the signing of the Tarapur accord in 1963 and this country's peaceful nuclear experiment at Pokharan in May 1974.

Since the issue is both vital and complex, its essential details need to be outlined briefly. To begin with, reprocessing of the spent fuel at Tarapur was not an afterthought but was envisaged as an integral part of the project's development under the original agreement. What is an after-thought in this respect is the U.S. attempt to seek a veto on reprocessing by unilaterally changing the terms of Indo-U.S. cooperation.

Under article 11-E of the 1963 agreement, the only requirement for reprocessing is "joint determination" by the two sides that the Indian facility for reprocessing is such that the provisions of article VI of the agreement (dealing with safeguards) can apply to it. All through the period preceding the NPT and for over five years after that, the U.S. never disputed the Indian contention that joint determination applied only to the safeguardability of the reprocessing facility.

The contracts signed under the Tarapur accord explicitly accept that the spent fuel is the exclusive property of the Indian government. Under the agreement, the U.S. has the "first option" to buy back such of the spent fuel as is "not required by India" but it has categorically refused to exercise this option because no state in America is prepared to store the spent nuclear fuel.

Terminating Agreement

It was way back in June 1968 that India forwarded to the U.S. the design of the reprocessing plant at Tarapur for joint determination of its safeguardability. On October 18, 1969, the U.S. informed this country of its satisfaction that the Indian design "permits effective application of the safeguards". In 1975, the reprocessing plant was ready and India approached the U.S. with a request to complete the "formality" of joint determination, initiated in 1968. To this no formal reply has been given by the U.S. to this day. But in 1978 it "advised" the Indian government that it was "not prepared at this time" to make the joint determination.

The last time the two sides stated to each other their positions on reprocessing bluntly was in early 1981. In an *aide memoire* on January 14, 1981, India informed the U.S. that it had decided "shortly to commence" reprocessing of spent fuel at Tarapur under the safeguards agreed to with the IAEA. The U.S. replied on March 2, that the need for joint U.S.-India determination was "not obviated" by the safeguards agreement with the IAEA.

Later that year, the U.S. indicated its willingness to relent on reprocessing provided India agreed to terminating the 1963 agreement while agreeing at the same time to place Tarapur and all its facilities under safeguards "in perpetuity". This was wholly unacceptable to India and a complete deadlock was averted only by the deal to substitute France for the U.S. as the supplier of nuclear fuel.

For the safe operation of the Tarapur power station, early reprocessing of the spent fuel is as necessary as immediate acquisition of spare parts. The situation is thus tailor-made for a renewal of bickering and bitterness whether or not the two issues are interlinked.

Must the two countries allow Tarapur to become a running sore in their relationship? Will it not be better amicably to terminate the 1963 agreement, shut down the plant which is working at a third of its capacity in any case and insure Indo-U.S. relations from the fall-out of the discord over Tarapur?

INDIA'S SECOND ATOMIC RESEARCH CENTER TO BE AT INDORE

Madras THE HINDU in English 3 Jul 83 p 4

[Text] THE second atomic research centre in the country will be established at Indore instead of Bhopal as decided earlier. The first centre is functioning at Trombay.

Mr J. V. Pai, then Joint Secretary, Ministry of Atomic Energy, Dr V. K. Iyengar Director, Nuclear Physics, Trombay, Mr. C. Ambasankaran of the Bhabha Atomic Research Centre and others had visited Bhopal in July last year and after detailed inspection, selected three sites for the research centre.

Subsequently the thinking changed. Experts like Mr. Raja Ramanna were of the view that there is no academic culture in Bhopal, which is a city of bureaucrats and unsuitable for the research centre. Indore was subsequently selected because it has academic culture and is an industrial city which can supply infrastructure.

Clearance in writing from the Central Government has been received by the State Government for the Rs. 100 crore atomic research centre.

The centre needs according to the Indore Collector, Mr. Ajit Jogi, about 1,800 acres of land. The State Government has 900 acres with it and land will have to be acquired. The centre will take four years to be completed.

Indore got the centre after the Prime Minister Mrs. Gandhi gave instructions that the second atomic research centre should be established in backward Madhya Pradesh, Uttar Pradesh or Bihar. Indore was chosen in the face of competing pressure from many other sites.

Indore University, in association with BARC, will start short-term diploma courses for students in MP so that they could be better trained for employment in the new research centre.

During talks here Mr. Ambasankaran is reported to have agreed that BARC scientists may go to Indore and deliver lecturers for these diploma courses free of cost for one or two years. BARC is also planning to start a school at Indore for intensive training for students to be employed at the centre.

CSO: 5100/7132

COUNTRY'S NUCLEAR ENERGY POTENTIAL EXPLORED

Lagos BUSINESS TIMES in English 25 Jul 83 p 1

[Text] THE first international energy conference in Nigeria, ENERCON '83, was held last week to discuss Nigeria's future energy options.

The conference, organised by the Centre for Energy Research and Development (CERD) of the University of Ife, was attended by scientists from the International Atomic Energy Commission (IAEA), France, Ghana, West Germany, Zambia and various Nigerian universities.

The focus of the conference, "The Role and Potential of Nuclear Energy in Nigeria" came at an appropriate time when Nigeria's long-term future oil earnings do not appear to be very rosy.

In opening the conference on behalf of the President, the Federal Minister of Mines and Power, Mohammed I. Hassan stated that Nigeria, a signatory of the nuclear Non-proliferation Treaty "may, if circumstances permit, embrace nuclear science for peaceful applications in such areas as agriculture, health and industry."

In his own address, the Federal Minister of Science and Technology, Mr Ademola Thomas, emphasised the need to plan ahead for alternative energy sources other than oil which is depletable.

The expectation for increasingly higher standard of living among the growing population of this country calls for a five-to-six-fold increase in energy consumption by the year 2000," he stated.

"If by the year 2000, we still depend on the sale of crude oil to earn foreign currency to pay for some of our imports, then the total demand on our crude reserves at that time will tend to rapidly deplete such reserves at such a rate as will leave little room for national economic security and comfort." Hence, he noted that it is quite conceivable that nuclear-based electric power production may be one of the additional sources on which the nation will depend to resolve the impending short-falls in our energy supply.

In search for a diversified future energy option, the Federal Government had assigned the University of Nigeria, Nsukka, and the University of Sokoto the responsibility for studying our solar energy potentials and the University of Ife and Ahmadu Bello University, Zaria, the responsibility of exploring nuclear science and technology. The centre for energy research and development is an outgrowth of this assignment.

The Acting Vice-Chancellor of the University of Ife, Professor A. O. Adenuga, in his welcome address stated that the goal of the nuclear energy programme at the University of Ife was manpower development for peace time applications of nuclear energy. "We have taken steps to ensure the multidisciplinary character of the programme," he emphasised.

He noted that, "This is reflected not only in the fact that the staff of our centre for energy research and development comprise of distinguished scientists drawn from the faculties of science, health sciences, agriculture, technology and the social science, but also the programme includes nuclear engineering, health physics and material science."

The Acting Director of CERD, Professor O

.. Oke, in his ac ess narrated the pro ess his team has m de since the introduction of the engineering physics programme in the University of Ife in 1976. The harvest in manpower is the production of "over 100 graduates in nuclear and material sciences and more than 30 scientists with doctoral degrees or working to earn their Ph.D s in various areas of nuclear energy."

Most of this success, the director claimed, is attributable to "the untiring efforts" of his predecessor, Professor A. E. Oluwole and his colleagues in the physics department. He thanked the present administration for continued financial support and the IAEA, the French and West German Governments and the various international universities for supporting and training our scientists.

This 4-day conference, ENERCON '83, which featured "The role and potential of nuclear energy in Nigeria," discussed the problems of training and man-power development peculiar to Nigeria, he policy and socio-political issues, the peaceful applications of nuclear energy, the safety problems and the science and technology of nuclear energy.

PICTURE shows the Federal Minister of Mines and Power, the Director CERD, Professor Oke, and in the foreground, the Federal Minister of Science and Technology examining a model of the proposed Nuclear Research Centre.

NUCLEAR ENERGY CELEBRATES PUBLIC'S HOPES, FEARS

Cape Town THE CAPE TIMES in English 19 Jul 83 p 5

[Article by Brian Barrow]

[Text]

WE'VE had another dribble of letters to the newspapers about the nuclear power station at Koeberg and someone has suggested that public opinion is now swinging in favour of Escom's controversial brainchild.

When people talk about public opinion in this case, what do they mean? If public opinion means what the great mass of people think, then that opinion has yet to make its way to the surface.

Is there any way that this can happen? Not as far as I can see. And even if there were, who would take any notice of an opinion that is uninformed and diffident.

As far as the vast majority of ordinary people are concerned, there has been hardly any expression of opinion at all, unless, of course, the few experts and scientists who keep on writing to the press, represent that opinion.

Hopes, fears

Obviously they don't, and the plain fact of the matter is that when it comes to Koeberg very little public opinion has been formed or moulded one way or the other.

As one of the great mass of outsiders (as opposed to the insiders), I have my hopes and fears about Koeberg, but I have no opinions except that I think it fundamentally wrong and socially, even morally, irresponsible to have it where it is — so close to Cape Town and its heavily populated suburbs.

But, for the rest, I, like most people have to accept it because it is there. Somehow, every ordinary person I have spoken to has a touching faith in those who have conceived and built Koeberg. They think that those responsible would never risk the smallest chance, would never do a single thing that could endanger the many thousands of us who are ignorant and powerless.

As we see it, those responsible are all good people with the best of intentions. And those others who oppose Koeberg are also good people with the best of intentions. Many of them are scientists and are well informed, with every justification to put the case against Koeberg.

But the vast majority of us are all somewhere in the middle without the knowledge to speak responsibly one way or the other. So we tend to say nothing at all. We all suffer from Koebergitis (getting inflamed about Koeberg without sufficient reason).

All we have to guide us is our common sense and we all know how unreliable that is. What is common sense against nuclear science? It is simply ludicrous to pit the one against the other. It is a no-win situation.

But common sense, however useless it might seem, goes on nagging. It is one of the things we hang on to in this no-win situation. And one thing it tells us is that reactor safety is not some-

thing that can be guaranteed absolutely.

Nuclear power stations are probably the most carefully engineered and rigidly regulated structures in the world. Apparently allowances are made for the most unlikely events such as air crashes, sabotage, war or natural disasters. None of these is ruled out.

At regular intervals nuclear reactors must be refuelled and the fission waste products and plutonium removed. The radio-active waste has to be shipped to a depository for long-term storage (in our case, Namaqualand) while the plutonium is re-fabricated into reactor fuel and taken back to the power plant.

In the United States they have found that transport accidents occur with predictable frequency. Railway carriages, for instance, are derailed about once every million kilometres. Road accidents occur even more frequently.

Then common sense asks whether the problem of storing radio-active waste has been adequately solved? This highly toxic waste has to be cared for over a period of many thousands of years. We shall have to build or find storage places for it which, like the pyramids, will have to outlast our present culture as monuments to our use of nuclear energy. What a monument to leave to future generations.

Common sense

We ordinary people may well be ignorant, but when common sense tells us that if something can go wrong it will, then we start thinking about the imponderables. We see the energy problem as a novel one for mankind. We realize that man has never before had to make such long-term decisions of comparable magnitude.

When one sees it this way, it becomes a matter of balancing our long-term future against short-term gain. If an error does occur somewhere along the long, long line, how high will be the cost?

But what's the point of asking such questions? The decision has been made. We must concede that it has been a highly informed one.

Can we be certain that it has been a rational one?

BRIEFS

NUCLEAR POLICY URGED--Zambia must begin to prepare for the eventual formulation of a national policy on nuclear energy, a nuclear physicist at the University of Zambia has said. Dr Muyoba Macwani said it would ultimately become necessary for Zambia to have a nuclear energy policy and the ground work for this must be laid. Dr Macwani has just returned from a converence on nuclear energy research in Nigeria where he was one of two Zambians who attended it. Research in nuclear energy was now being undertaken at Unza and the National Council for Scientific Research and this work would need to be coordinated by Government policy. Nigeria has a definite policy on the use of nuclear energy and as a result research is well advanced in the field. Nuclear energy could be used in developing agriculture and industry. Zambia was asked to host the next African nuclear conference and Dr Macwani said this could be done. [Text] [Lusaka TIMES OF ZAMBIA in English 28 Jul 83 p 5]

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NEW FIRM ESTABLISHED TO COORDINATE PLANS FOR FIFTH N-PLANT

Helsinki HELSINGIN SANOMAT in Finnish 2 Jul 83 p 24

[Article: "New Firm Established for Fifth Nuclear Power Plant"]

[Text] Porvoo--Imatra Power (IVO) and Teollisuus [Industrial] Power (TVO) are establishing a new firm for bringing into reality a fifth nuclear power plant. The companies agreed to cooperate on the construction of a new power plant at the beginning of last year already, but now their plans are leaning toward the establishment of a new power company.

IVO's and TVO's new firm has already been christened as ITY in accordance with the combination of letters taken from the names of both companies. The preparatory work of the new firm is already in progress in a working group made up of lawyers from IVO and TVO.

IVO and TVO have promoted the construction of a new 1,000-megawatt power plant by the beginning of the 1990's for a long time already. This project has also been included in the general planning proposal for electricity management covering 1983--92. Finally, it is expected that a decision on a nuclear power plant will be in parliament next winter.

The power companies have justified their project with the advantages of nuclear power. Background support for the idea has also been obtained on the basis of the competitive ability of the paper industry, Finland's basic industry. According to the power companies, the paper industry is now in need of guarantees of the availability of competitively priced electricity in the future also. The proportion of energy in the production costs of new projects in the forest industry is 10--40 percent.

The power companies have already begun to compile preliminary economic and funding models for the new firm. Preparations have already been made for the tendering of bids on the new nuclear power plant in the name of the company to be established. The Soviet as well as French alternatives are still being considered.

The ITY project also includes an effort to make public opinion more favorable toward nuclear power. In the language of the power companies there is talk

about "obtaining public approval, which presupposes the distribution of sufficient and relevant information to decisionmakers, the media, and to the general public."

The chairman of the management of the ITY's organization is Director Kalervo Nurminaki from IVO. The remainder of IVO's representation is management level, but TVO's representation will come from among its stockholders.

It is estimated that the cost of the fifth nuclear power plant will be approximately 5 billion markkaa. The capital stock of the new firm will amount to several hundred million markkaa. The capital stock of TVO's nuclear-powered plants alone with a total capacity of 1,320 megawatts is presently 694 million markkaa. IVO owns 13.6 percent of TVO, but TVO does not own any of IVO's shares.

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PAPER SAYS NUCLEAR-SAFETY INSPECTION INADEQUATE

Helsinki HELSINGIN SANOMAT in Finnish 4 Jul 83 p 2

[Editorial: "Effectiveness of Nuclear Plant Inspection Veiled in Obscurity"]

[Text] During the spring the power companies began a powerful campaign to promote the sales of their product. Other industries, which have been harnessed as a background force, have, on the other hand, energetically argued the significance of sufficient and competitively priced electric energy in their producton activities. At the same time that a discussion has been conducted on a new large power plant, the common denominator of the information efforts of industry as well as the producers of electricity has been nuclear power. Also the consulting committee on the management of electricity has leaned toward supporting nuclear power in its new general plan.

There has been a definite transition toward a new era in the 1980's in Finland's nuclear power discussion. The central theme is no longer the supplier, builder, or the location of a plant, but the possible safety risks as well as the problem of waste caused by nuclear power. Uncertainty has spread to Finland from the United States and elsewhere in Europe where the nuclear power movement already has a long tradition.

Finland's nuclear power companies have now been compelled to face the same facts. They are making every effort to create a positive picture of nuclear power. Even the Swedish experience is frightening.

However, the nuclear power discussion has been characterized by a certain lack of authority. There are many traits of an emotional nature in the argument and the only parties involved in it are the consumers and the producers. The situation is difficult from the point of view of the man on the street since his own opinion must somehow be formed on the conditions of quarters representing extreme views. Uncertainty ould be alleviated if people could have more trust in the officials responsible for the inspection of nuclear power. However, the outward image of the Radiation Safety Institute has been badly obscured in the bureaucratic maze.

In a recent report the administrative committee of the Radiation Safety Institute expressed a hope for greater emphasis on the inspection and surveillance responsibilities of the institute. The argument for this was the use

of nuclear power and the increase in the number of duties it has created in the institute's work. The committee proposes that the institute be made into a Radiation Safety Center, whose activities would be guided by a general manager.

Reforms based on mere organizational changes could easily give the impression of being cosmetic. However, they could provide an opportunity to emphasize the outward image of the institute as an independent surveillance authority unconditionally concerned with safety.

It is also important that the institute's self-sufficiency as a research agency be improved. The State Technical Research Center does, in fact, dominate questions related to nuclear power, but it is essential to emphasize the qualifications of actual safety officials. Inspection staffs must be provided with an opportunity for more extensive research activity for developing and maintaining their professional skills. In this way it will be possible to increase the prestige of the institute in the eyes of the people.

The Radiation Safety Institute must also be guaranteed the proper operating conditions necessary to perform its tasks. For example, the threat of decentralization, which has hung over the institute for a decade already, must be immediately eliminated. Since th+ INspection and surveillance of nuclear power plants make up approximately half of the institute's work, it is important to maintain close contacts with other official experts in the event of an accident.

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NUCLEAR EMERGENCY EVACUATION EXERCISE AROUND ASCO PLANT

Barcelona AVUI in Catalan 19 Jul 83 p 6

[Article by Tomas Carot]

[Text] Tarragona--This afternoon there will be another mock emergency at the Asco nuclear plant. This is the second exercise that will put into practice the evacuation of two municipalities--Asco and Vinebre--starting from an assumed nuclear catastrophe, and what would be the consequences of an accident if the reactor froze, which would lead to fusion.

With this mock evacuation exercise the nuclear emergency plan for the towns will be put into practice. The exercise will not involve evacuation of the resident population of Asco and Vinebre, which have 3,000 inhabitants, but they will take part to mobilize workers from the No 1 Asco nuclear plant.

The evacuation of the workers from the nuclear plant will be ordered. The evacuation will take place in the manner prescribed by the internal emergency plan.

At the same time, the alert warning teams of the municipal governments affected, with the support of the neighboring municipalities and the prior order of the director of the emergency plan, with half fixed and mobile, will communicate the fact to the inhabitants and will tell them to remain confined to their respective homes. The confinement, prior to evacuation, must proceed in an orderly fashion and without dividing family unity.

Different vehicles and railway units will move to the concentration points set up in the respective municipal plans and will transport the inhabitants outside a 3-kilometer radius of the area affected by the assumed nuclear catastrophe.

Just yesterday, in an officially recorded action, the Civil Government and the assistant coordinator for the state office of Civil Protection delivered the 13 mobile units, vehicles with loudspeaker devices and communications systems with Cecot--center of communications installed at the Civil Government of Tarragona--to be able to carry out the exercise.

It needs to be determined that an aerial plan will be established which will include the populations affected. Likewise, a military camp will also be set up for decontamination and classification at the town limits of Marca, at the Priory, and a field hospital in Tarragona.

The purpose of the simulation is to be able to check the total evacuation time for the localities, the capacity of the roads that may be chosen for the evacuation, the coordination of the vehicles and the behavior of the different teams taking part.

Once this exercise is set to go and duly approved, it will constitute the decisive point for the provisional approval of first instance and later final approval of the Tarragona nuclear plan, which is considered to be the pilot plan for the nuclear plants of the Spanish State. Once this plan is finally approved, authorization will be given to the nuclear plant so that it may increase its capacity and connect its electrical production to the network of the country.

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